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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/628,599	07/28/2000	Ian R. Finlay	12780-1015	3713

62688   7590   04/06/2007

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EXAMINER
LY, ANH

ART UNIT	PAPER NUMBER
2162	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/06/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

		Application No.	Applicant(s)
Office Action Summary		09/628,599	FINLAY ET AL.
		Examiner	Art Unit	
		Anh Ly	2162	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>05 January 2007</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   This Office Action is response to Applicants' Appeal Brief filed on 01/05/2007.

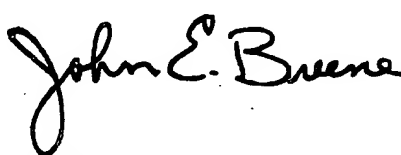## Reopening of Prosecution after Appeal Brief

2.   In view of the Appeal Brief filed on 01/05/2007, PROSECUTION IS HEREBY

REOPENED. A new ground rejection set forth below.

        To avoid abandonment of the application, appellant must exercise one of the

following two options:

        (1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply

under 37 CFR 1.113 (if this Office action is final); **or**,

        (2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed

by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and

appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth

in 37 CFR 41.20 have been increased since they were previously paid, then appellant

must pay the difference between the increased fees and the amount previously paid.

        A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by

signing below:

3.   Claims 1-19 are pending in this Application.

Claim Rejections - 35 USC § 101

4.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5.   Claims 1-22 are rejected under 35 U.S.C. 101 because the bodies of claims 1 10 and 19 in view of MPEP 2106 (IV)(C)(2)((1) & (2) & (a) & (b) & (c)) sections are non statutory because they are **lacking of real world useful result**. They are missing the steps or processes producing any useful result to the invention, of having a utility to convey the final result achieved by the claimed invention, that is, they are not producing a result tied to the real/physical world or this application is not a practical application. That is, these claims are missing "**utility requirement**" of 35 U.S.C. 101 (the utility of an invention has to be (i) specific, (ii) substantial and (iii) credible (MPEP 2107.01), these claims must show that the claimed invention is "useful" for some purpose either explicitly or implicitly. **That is, these independent claims do not have a readily apparent well-established utility and particular benefit to the public or to the user(s).** (Fisher, 421, F.3d 1356, 76 USPQ2d at 1230 and 1225 (Fed. Cir. 2005). Thus, requiring the applicant to distinguish the claim from the three 35 U.S.C. 101 judicial exceptions (Laws of Nature, Natural Phenomena and Abstract Ideas) (MPEP 2106 IV C) to patentable subject matter by specifically reciting in the claim the practical application. A claim that can be read so broadly as to include statutory and nonstatutory subject matter must be amended to limit the claim to a practical application. In other words, if the specification discloses a practical application of a section 101 judicial exceptions, but the claim is broader than the disclosure such that it does not require a

practical application, then the claim must be rejected. That is, it require that the claim

must recite more than 101 judicial exception, in that the process claim must set forth a

practical application of that judicial exception to produce a real-world result (Benson,

409 U.S. at 71-72, 175 USPQ at 676-77) and the process must have a result that can

be substantially produce the same result again and must achieve the required status of

having real world value or to be realized as "useful result". (In re Swartz, 232 F3d 862,

864, 56 USPQ2d 1703, 1704 (Fed. Cir. 2000)).

More specifically, the bodies of these independent claims (1, 10 and 19) related

to determining a first operation code and augmenting the operation code. Nowhere in

these claims (1, 10 and 19) are having a useful result from these processes:

determining and augmenting operation code to this invention or to the user(s). it must

show that to have a well-defined and **particular benefit to the public** (In re Fisher, 421

F.3d 1365, 1371, 76 USPQ2d 1225, 1230 (Fed. Cir. 2005), or the claimed invention has

a significant and presently available **benefit to the public** (Fisher, 421 F.3d at 1371, 76

USPQ2d at 1230). Thus, These produced result remain in the abstract and, thus, fails to

achieve the required status of having real world value or to be realized as "useful

result".

6.   Claim 10, "a computer program product" is software per se. It is lacking/missing

physical object to **execute** the instructions stored on the recording medium, which must

be well-defined in the instant specification. It fails to fall into one of the four categories of

35 USC 101.

Claimed Subject Matter Not in Specification

7.   The specification is objected to as failing to provide proper antecedent basis for

the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction

of the following is required: the augmenting the operation code … with a pointer and a

recording medium (what type of medium) both do not support clearly in the

specification.

Drawings

8.   The drawings are objected to under 37 CFR 1.83(a). The drawings must show

every feature of the invention specified in the claims. Therefore, the claimed invention

of claims 1, 10,12, 14, 19, 20 and 22: "augmenting said first operation code … with a

pointer" must be shown or the feature(s) canceled from the claim(s) (the drawings do

not include "augmenting operation code). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in

reply to the Office action to avoid abandonment of the application. Any amended

replacement drawing sheet should include all of the figures appearing on the immediate

prior version of the sheet, even if only one figure is being amended. The figure or figure

number of an amended drawing should not be labeled as "amended." If a drawing figure

is to be canceled, the appropriate figure must be removed from the replacement sheet,

and where necessary, the remaining figures must be renumbered and appropriate

changes made to the brief description of the several views of the drawings for

consistency. Additional replacement sheets may be necessary to show the renumbering

of the remaining figures. Each drawing sheet submitted after the filing date of an

application must be labeled in the top margin as either "Replacement Sheet" or "New

Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

the applicant will be notified and informed of any required corrective action in the next

Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

9.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

10.   This application currently names joint inventors. In considering patentability of

the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g)

prior art under 35 U.S.C. 103(a).

11.   Claims 1-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over by

Background of the instant specification (page 1 and 2) (hereinafter BACKGROUND) in

view of Pub. No.: US 2002/0147969 A1 of LETHIN et al. (hereinafter LETHIN).

With respect to claim 1, BACKGROUND teaches a method for pre-processing an access plan generated for a query in a relational database management system to include a direct call mechanism replacing a lookup table of a runtime interpreter, said access plan including a plurality of operation codes, each of said operation codes being associated with one or more executable functions for performing the query (executing SQL statement in a RDBMS , the SQL optimizer parses and analyzes the statement, transforming it into QGM). This process requiring a run-time interpreter for looking up local variable; also this executable plan includes a plurality of SQL3 Query control statements, which are parsing into some operation codes into query graph model (QGM) representation of the statements, from which they are then processed to optimized QGM, an access execution plan such as cost-based optimized access plan and they are to be produced operation code or opcode by code generation module. The access plan produced by the cost-based optimized is then processed by CODGEN to produce an Operation Code (OPCODE) based access plan, which can be processed at runtime by a RDBMS (see page 2, lines 6-31), said method comprising the step of :

determining from the access plan an executable function associated with a first operation code (the access plan is generated via COGEN at runtime by a RDBMS: page 2, lines 12-15); and

providing a direct call mechanism replacing lookup function of a runtime interpreter (the extracted SQL statement is used to produce opcode based on parser, QGM and code generation and replacing this opcode, looking up function which is called to process the OPCODE: page 2, lines 16-31).

BACKGROUND teaches an access plan is generated via COGEN at runtime by a RDBMS. BACKGROUND does not clearly teach augmenting said first operation code in the access plan with a pointer to said executable function.

However, LETHIN teaches translating OPCODE with a pointer (see fig. 5B and sections 0088, 0257, 0502 and 0546).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of BACKGROUND with the teachings of LETHIN. One having ordinary skill in the art would have found it motivated to utilize the translator which perform analysis and compilation of an OPCODE (instruction set or a SQL statement) in real time during execution on OPODE instructions for replacing a lookup function, thereby, optimizing the target code and to make this code available to interpreter for execution (LETHIN's section 0001 and 0211-0213).

With respect to claim 2, BACKGROUND teaches comprising repeating steps (a) and (b) for remaining operation codes in the access plan (see page 2, lines 3-31).

With respect to claims 3-4, BACKGROUND teaches a method for pre-process an access plan as discussed in claim 1.

BACKGROUND teaches an access plan is generated via COGEN at runtime by a RDBMS. BACKGROUND does not clearly teach a data structure for storing a pointer to said executable function and wherein said data structure includes means for storing information associated with said executable function for said first operation code.

However, LETHIN teaches a data structure called IL_CTXT storing pointer to a linked list storing the code or information being compiled (sections 0254 and 0359).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of BACKGROUND with the teachings of LETHIN. One having ordinary skill in the art would have found it motivated to utilize the translator which perform analysis and compilation of an OPCODE (instruction set or a SQL statement) in real time during execution on OPODE instructions for replacing a lookup function, thereby, optimizing the target code and to make this code available to interpreter for execution (LETHIN's section 0001 and 0211-0213).

With respect to claim 5, BACKGROUND teaches a method for pre-process an access plan as discussed in claim 1.

BACKGROUND teaches an access plan is generated via COGEN at runtime by a RDBMS. BACKGROUND does not clearly teach a second pointer to a data structure, said data structure providing means for storing information associated with said first operation code or said executable function.

However, LETHIN teaches a data structure called IL_CTXT storing all pointers to all instructions that might use the same value (sections 0359).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of BACKGROUND with the teachings of LETHIN. One having ordinary skill in the art would have found it motivated to utilize the translator which perform analysis and compilation of an OPCODE

(instruction set or a SQL statement) in real time during execution on OPODE

instructions for replacing a lookup function, thereby, optimizing the target code and to

make this code available to interpreter for execution (LETHIN's section 0001 and 0211-

0213).

With respect to claim 6, BACKGROUND teaches wherein said step (a) further

includes assessing the executable function associated with the first operation code and

if applicable, replacing the call to the executable function with a call to a second

executable (page 2, lines 16-31).

With respect to claim 7, BACKGROUND teaches wherein said intermediate

function includes processing operations for the first operation code or the executable

function associated with the first operation code (page 2, lines 16-31).

With respect to claims 8 and 9, BACKGROUND teaches a method for pre-

process an access plan as discussed in claim 1.

BACKGROUND teaches an access plan is generated via COGEN at runtime by

a RDBMS. BACKGROUND does not clearly teach wherein said processing operations

in the intermediate function include gathering statistics on the user of the executable

function associated with the operation code and include a pause for receiving user input

before or after the call to the executable function.

However, LETHIN teaches statistic area storing all statistical information

(sections 0139 and 0561) and causing the program to halt for displaying or storing

information from user (section 0522).

Therefore, it would have been obvious to a person of ordinary skill in the art at

the time the invention was made to combine the teachings of BACKGROUND with the

teachings of LETHIN. One having ordinary skill in the art would have found it motivated

to utilize the translator which perform analysis and compilation of an OPCODE

(instruction set or a SQL statement) in real time during execution on OPODE

instructions for replacing a lookup function, thereby, optimizing the target code and to

make this code available to interpreter for execution (LETHIN's section 0001 and 0211-

0213).

Claim 10 is essentially the same as claim 1 except that it is directed to a

computer program product rather than a method, and is rejected for the same reason as

applied to the claim 1 hereinabove.

Claim 11 is essentially the same as claim 2 except that it is directed to a

computer program product rather than a method, and is rejected for the same reason as

applied to the claim 2 hereinabove.

Claim 12 is essentially the same as claim 3 except that it is directed to a

computer program product rather than a method, and is rejected for the same reason as

applied to the claim 3 hereinabove.

Claim 13 is essentially the same as claim 4 except that it is directed to a

computer program product rather than a method, and is rejected for the same reason as

applied to the claim 4 hereinabove.

Claim 14 is essentially the same as claim 5 except that it is directed to a computer program product rather than a method, and is rejected for the same reason as applied to the claim 5 hereinabove.

Claim 15 is essentially the same as claim 6 except that it is directed to a computer program product rather than a method, and is rejected for the same reason as applied to the claim 6 hereinabove.

Claim 16 is essentially the same as claim 7 except that it is directed to a computer program product rather than a method, and is rejected for the same reason as applied to the claim 7 hereinabove.

Claim 17 is essentially the same as claim 8 except that it is directed to a computer program product rather than a method, and is rejected for the same reason as applied to the claim 8 hereinabove.

Claim 18 is essentially the same as claim 9 except that it is directed to a computer program product rather than a method, and is rejected for the same reason as applied to the claim 8 hereinabove.

Claim 19 is essentially the same as claim 1 except that it is directed to a system rather than a method, and is rejected for the same reason as applied to the claim 1 hereinabove.

Claim 20 is essentially the same as claim 3 except that it is directed to a computer program product rather than a method, and is rejected for the same reason as applied to the claim 3 hereinabove.

Claim 21 is essentially the same as claim 4 except that it is directed to a computer program product rather than a method, and is rejected for the same reason as applied to the claim 4 hereinabove.

Claim 22 is essentially the same as claim 5 except that it is directed to a computer program product rather than a method, and is rejected for the same reason as applied to the claim 5 hereinabove.

Contact Information

12.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anh Ly whose telephone number is (571) 272-4039 or via E-Mail: ANH.LY@USPTO.GOV **(Written Authorization being given by Applicant (MPEP 502.03 [R-2])) or fax to (571) 273-4039 (Examiner's personal Fax No.)**. The examiner can normally be reached on TUESDAY – THURSDAY from 8:30 AM – 3:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **John Breene**, can be reached on (571) 272-4107.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). Any response to this action should be mailed to: Commissioner of Patents and Trademarks, Washington, D.C. 20231, or faxed to: **Central Fax Center: (571) 273-8300**

ANH LY
MAR. 28th, 2007

JOHN BREENE
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